

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

In the specification, the title has been amended per the Examiner's request.

Claims 37 and 38 are currently being amended.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 37-49 remain pending in this application.

In the Office Action, claims 37 and 38 were rejected under 35 U.S.C. § 112, second paragraph as being allegedly indefinite. These claims have been amended to address this rejection. Specifically, the amendments make clear that the "conductive member" is formed in the opening. Accordingly, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 112.

Also in the Office Action, claim 37 was rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Applicant's description of related art in the present specification. Claims 38-44 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Applicant's description of prior art as applied to claim 37 in view of U.S. Patent No. 6,180,505 to Uzoh et al. Finally, claims 45-49 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Applicant's description of prior art in view of Uzoh et al. and Ishikawa (JP 2000-4069). In view of the amendments to independent claims 37 and 38 and for at least the reasons set forth herein, these rejections have been traversed.

By way of background, the present invention as claimed includes the feature that neither the conductive member (3) nor the plating layer (4B) protrudes from the back surface (second principal surface) of the insulating substrate (1). Another feature is that the conductive member (3) is formed thinner than the insulating substrate (1). In this way, the wiring board fabricated by the invention can effect a reduction in thickness of a semiconductor device with a semiconductor chip mounted on the wiring board. Furthermore, since the conductive member (3) is used as an external connection terminal, a wiring board for an LGA type semiconductor device can be produced by using a copper foil *single*-sided tape material. This reduces the material costs and simplifies the manufacturing steps, as compared to the case of a conventional LGA type semiconductor device where a copper foil *double*-sided tape material is used.

In Applicant's description of related art, and in contrast to the claimed invention, the conductive member (through-hole plating (15)) protrudes from the back surface of insulating substrate (1), as shown in FIGS. 3, 4B and 4C in the present application. Furthermore, as shown in FIGS. 3, 4B and 4C, the prior art conventional LGA type semiconductor device needs to be equipped with an external connection terminal (17) formed on the back surface of insulating substrate (1) because of the protruding structure of conductive member (through-hole plating (15)). Therefore, Applicant's description of related art cannot anticipate, teach or suggest the invention as recited in claim 37.

With regard to Uzoh et al., as shown in Figure 13 the copper film (10) and the separate copper film (17) do not have a thickness thinner than that of the insulating film (3). Because of this, the copper film (10) and the separate copper film (17), which would correspond to the "conductive member" of the present invention, must have contact layers, which correspond to "thin layer films" formed on the conductive member of the invention, of a NiP film (43) and a gold film (50) that are protruded from the surface of the insulating film (3). Furthermore, as described above, the contact layers, which correspond to "thin layer films" formed on the conductive member of the invention, are protruded

from the surface of the insulating film (3). Thus, neither Applicant's description of related art nor Uzoh et al. disclose, teaches or suggests the feature of the invention, as recited in claim 38, that "said thin film layer made of gold does not protrude from said second principal surface."

With regard to Ishikawa, the reference fails to disclose, teach or suggest "said conductive member does not protrude from a second principal surface" as recited in the amended claims 37 and 38. Namely, it is apparent in Ishikawa that a filling material (3) to fill the opening (5) is protruded from both surfaces of a printed wiring board (1). Furthermore, Ishikawa fails to disclose whether the filling material (3) to define the concave (6) is formed with a conductive material. Accordingly, the invention as recited in claims 45 to 49 cannot be deemed to be rendered unpatentable over the combination of Applicant's description of related art, Uzoh et al. and Ishikawa.

For the reasons set forth above and in view of the amendments to independent claims 37 and 38 from which the remaining claims depend, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date DECEMBER 20, 2004

By 

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